

FIG. 1

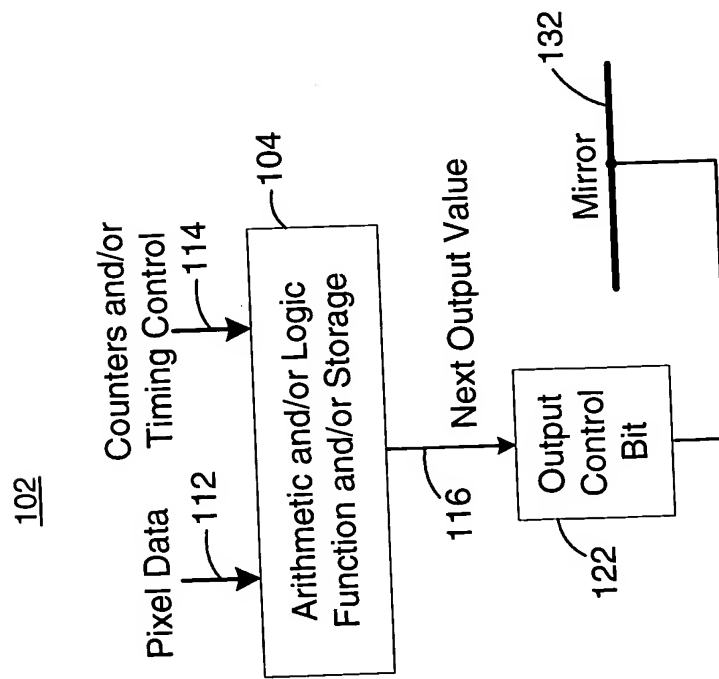


FIG. 2

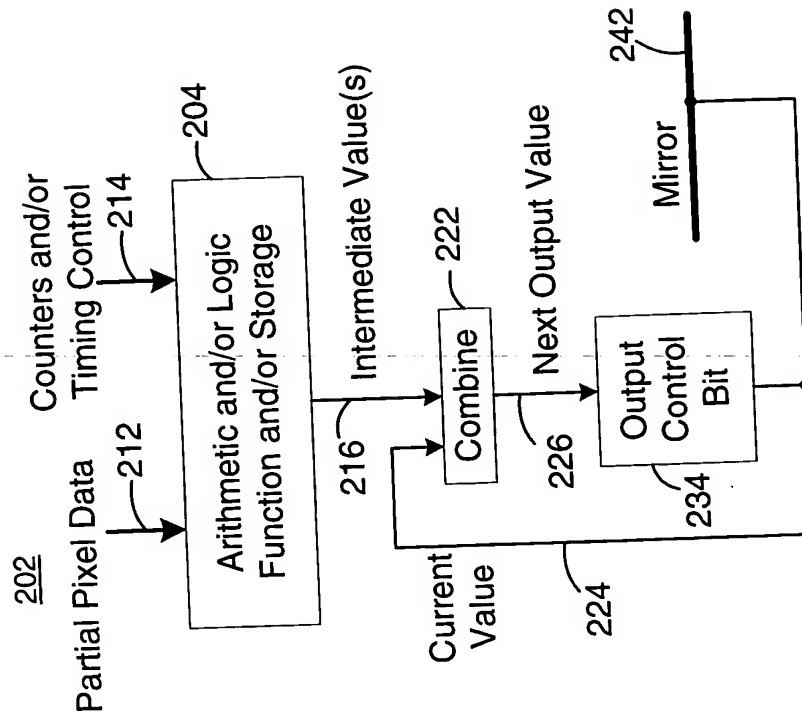


FIG. 3

Count	Read Bits	Decision to turn off Display-Bit
	210	
0	000 Read Bits 2,1,0	If all three are not 0, turn on output
1	001 Read Bits 2,1	If both 0, turn off output
2	010 Read Bits 2,0	If both 0, turn off output
3	011 Read Bit 2	If 0, turn off output, bit 2 memory is free
4	100 Read Bits 1,0	If both zero, turn off output
5	101 Read Bit 1	If 0, turn off output, bit 1 memory is free
6	110 Read Bit 0	If 0, turn off output, bit 0 memory is free
7	111 No reads	turn off output

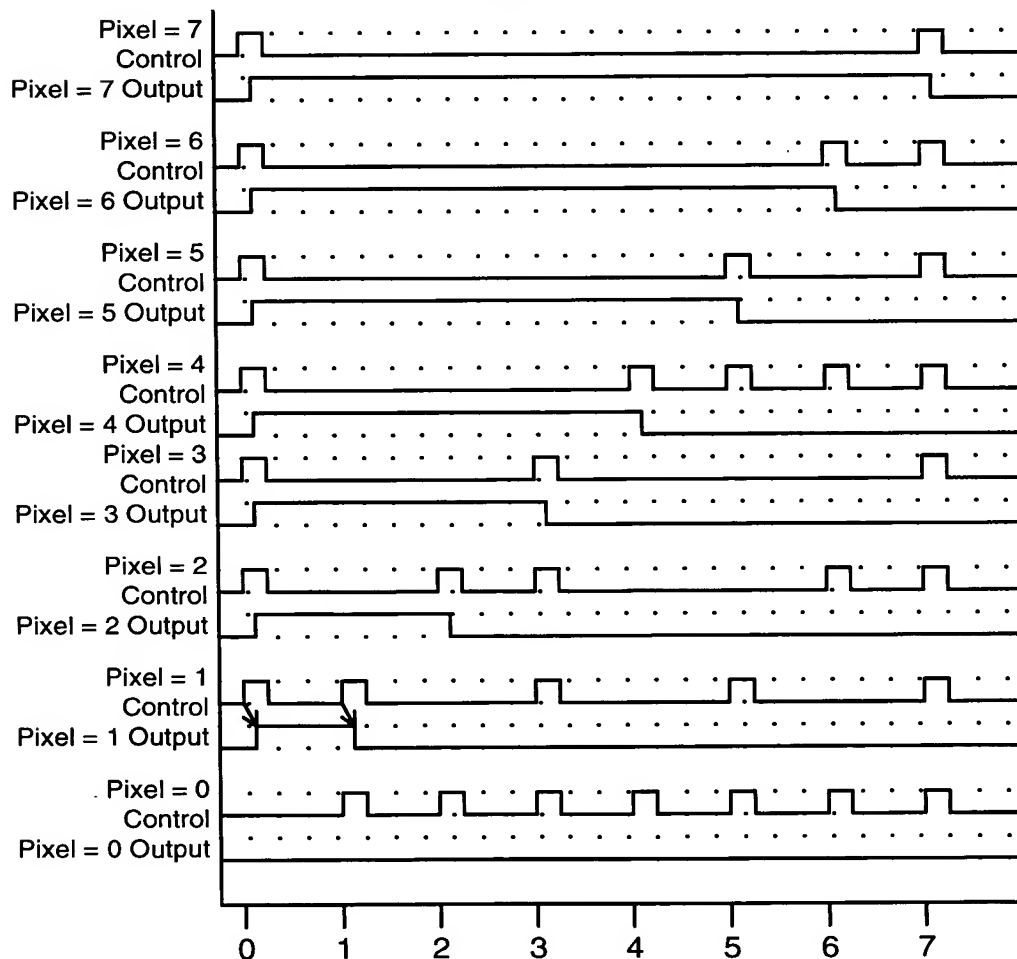
FIG. 4

FIG. 5

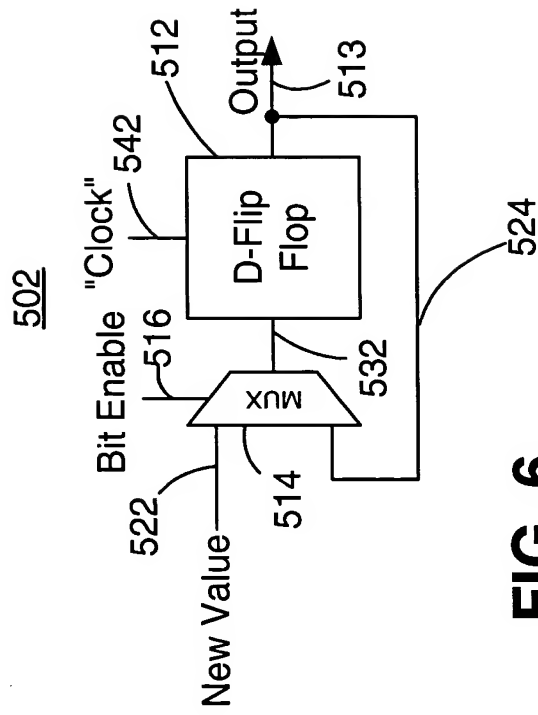


FIG. 6

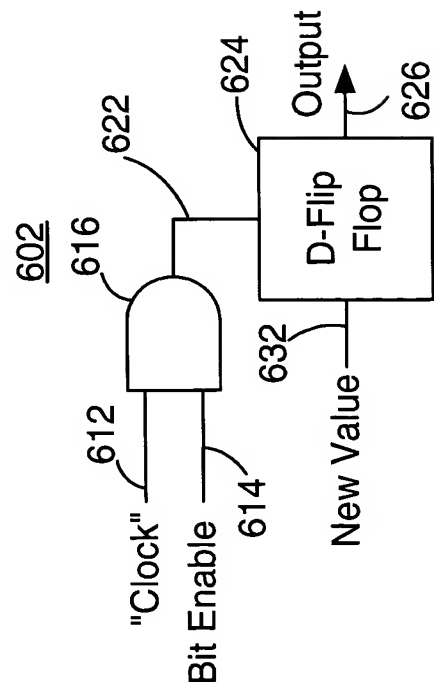


FIG. 7

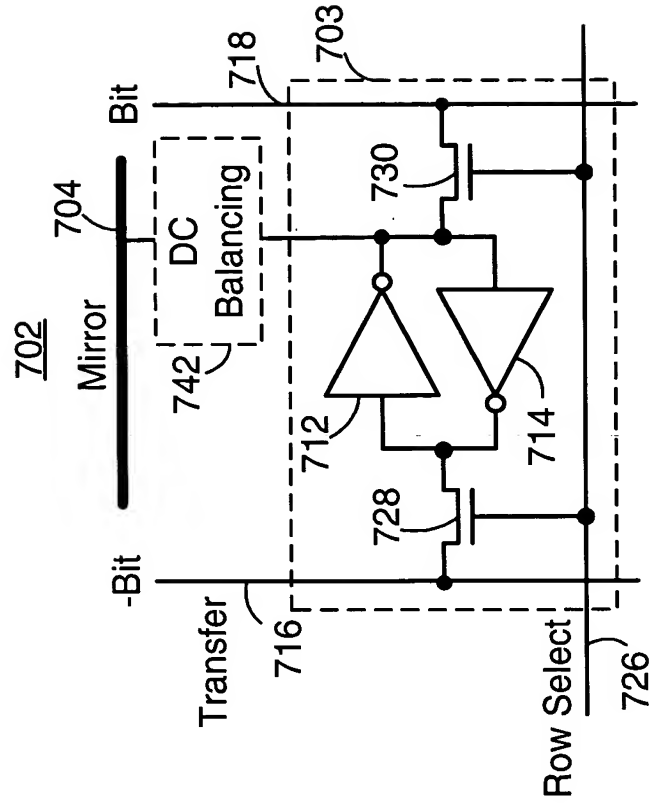


FIG. 8

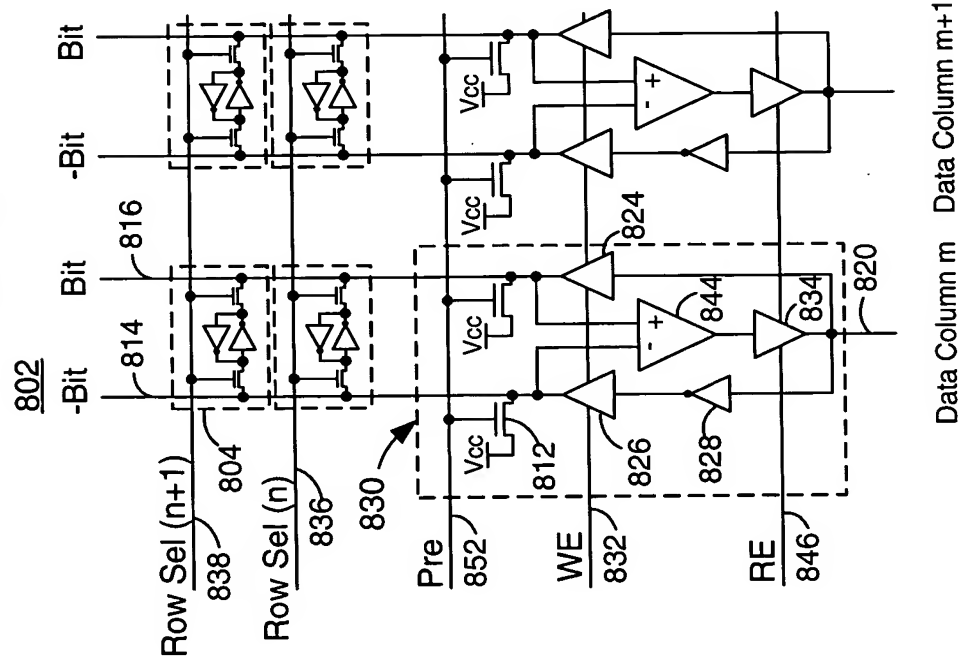


FIG. 9

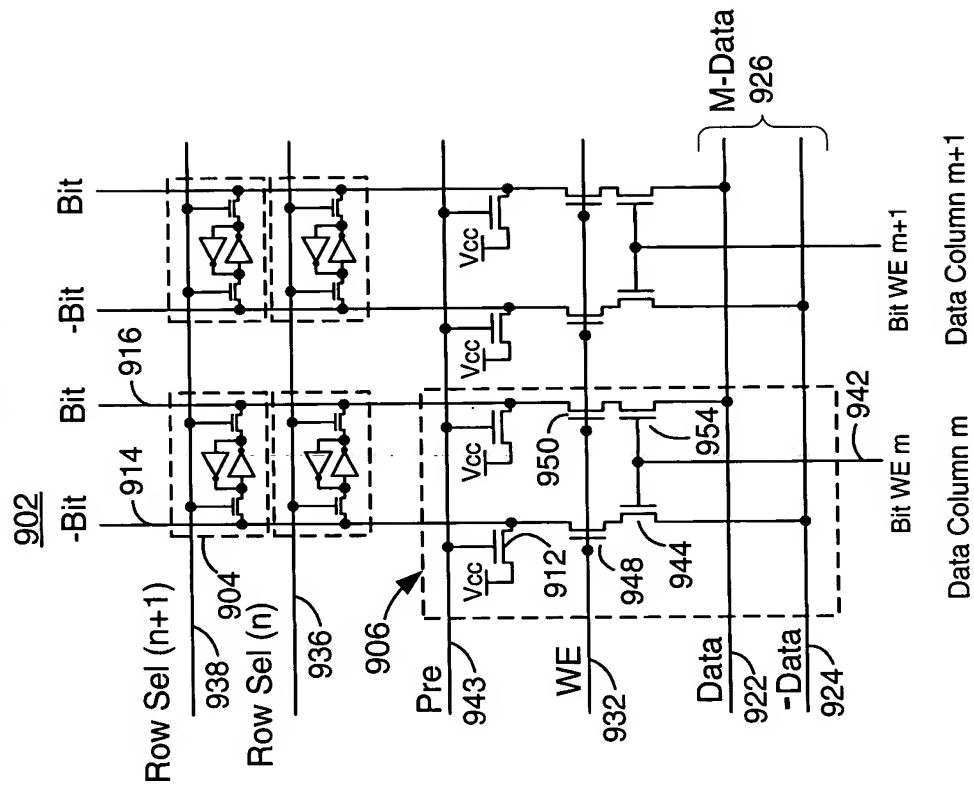


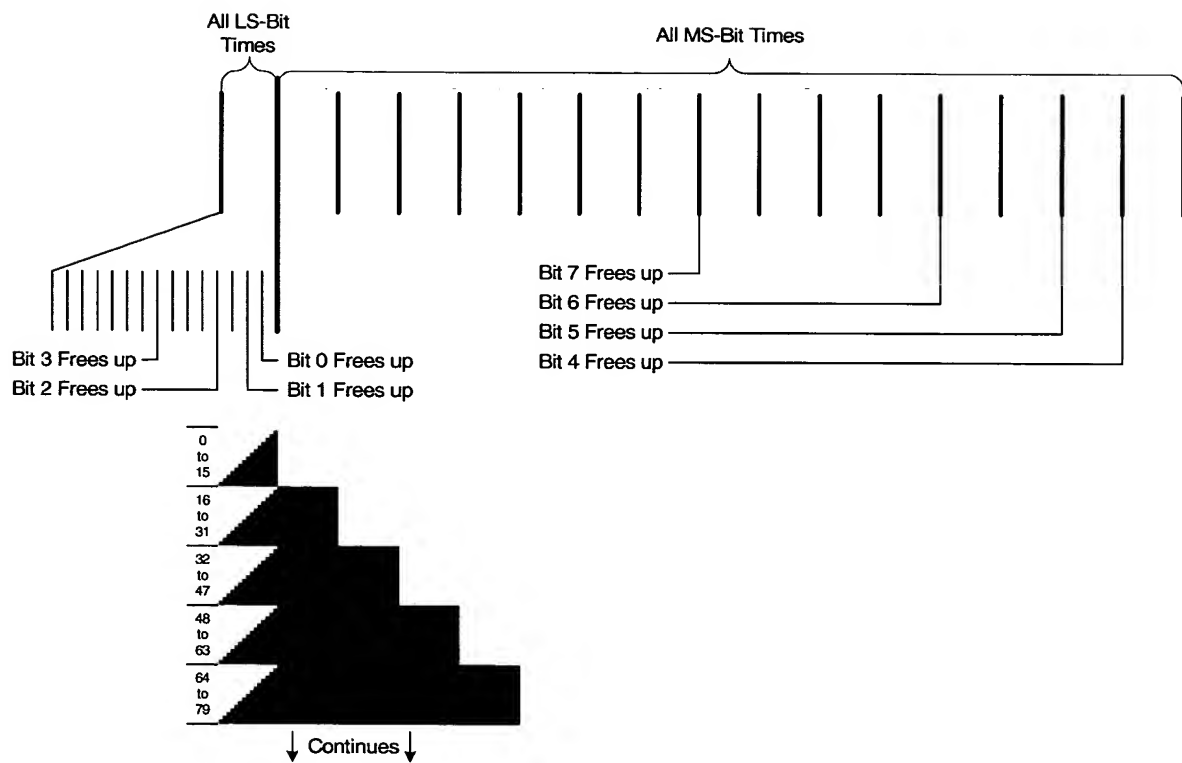
FIG. 10

FIG. 11A

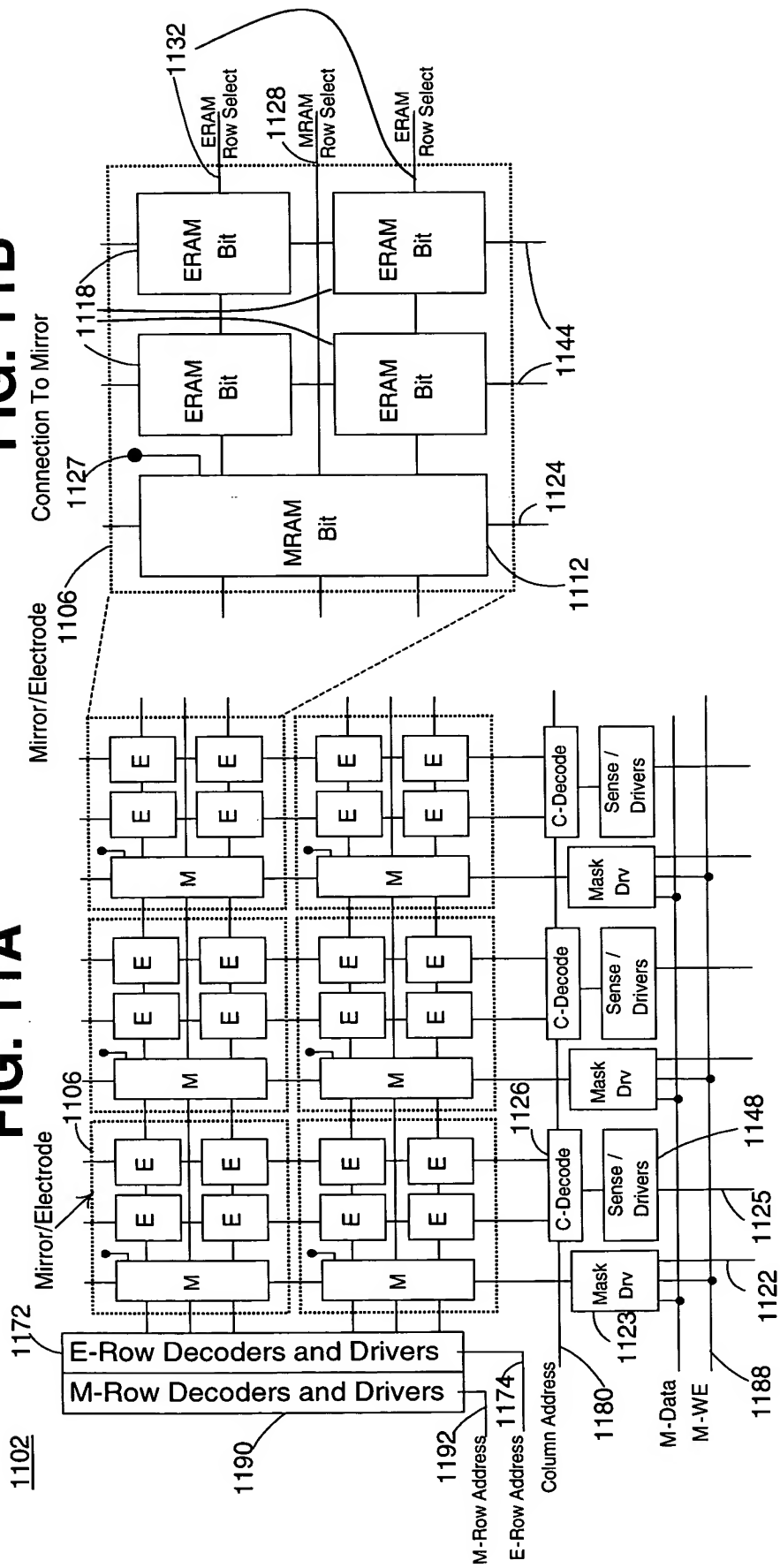


FIG. 11B

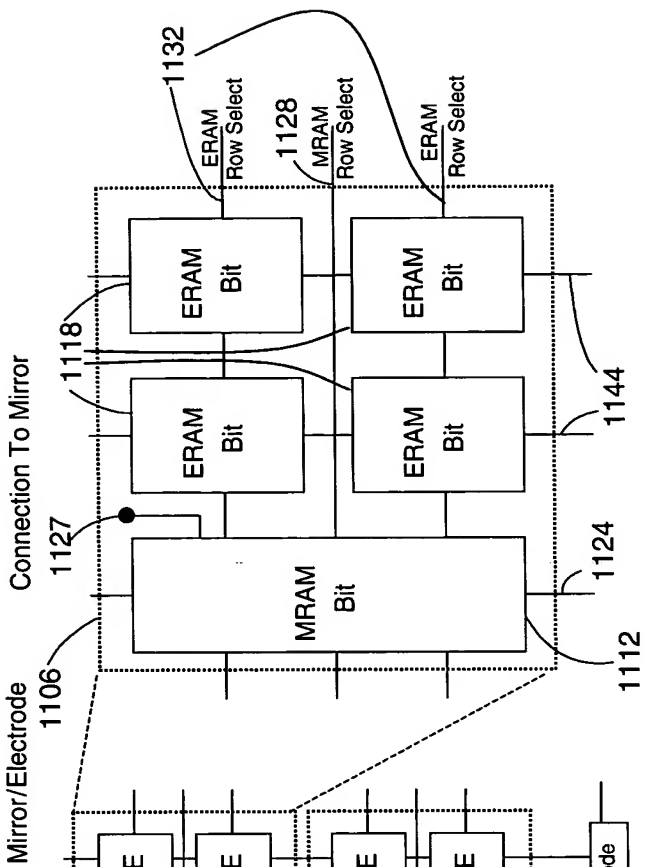


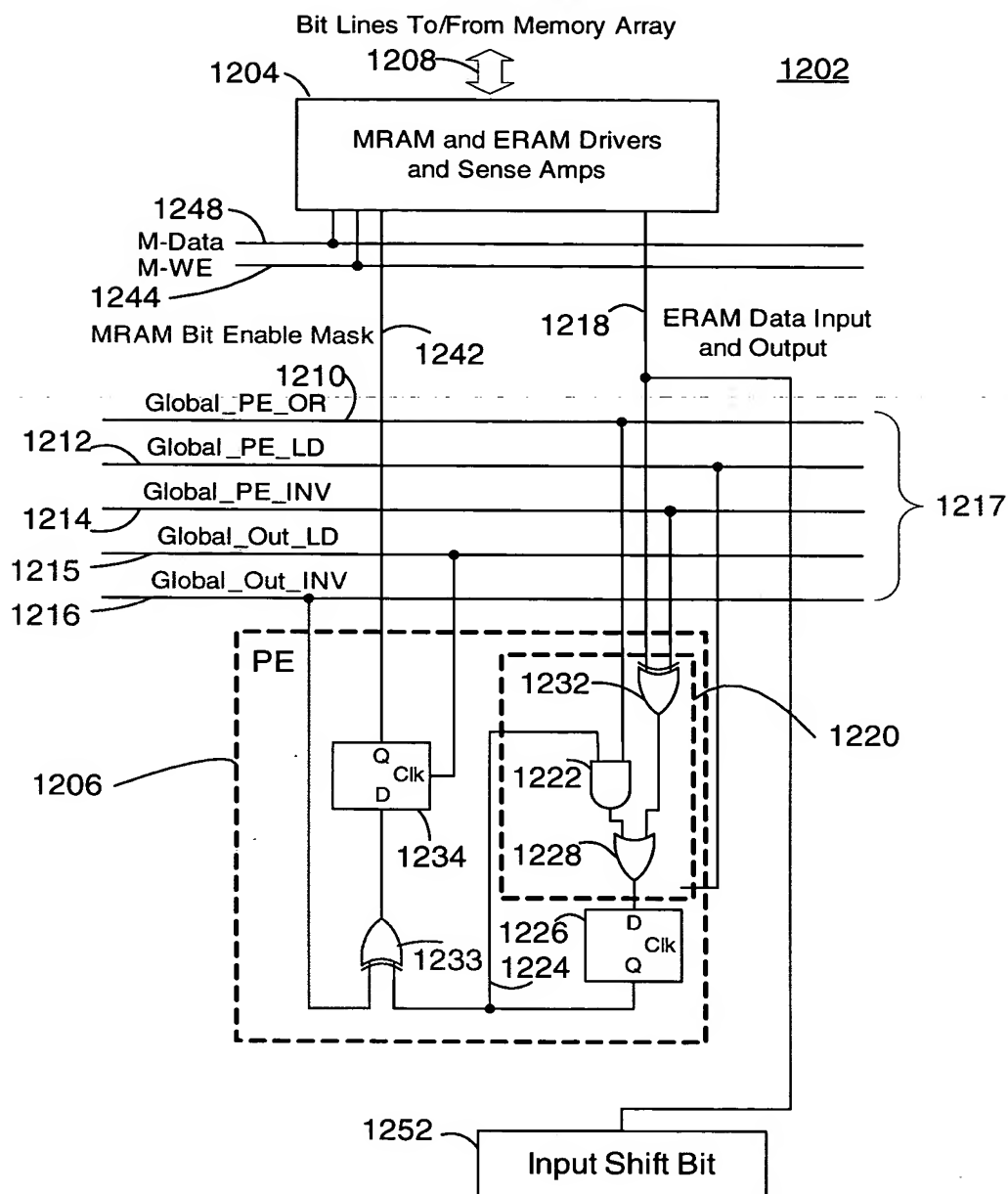
FIG. 12

FIG. 13

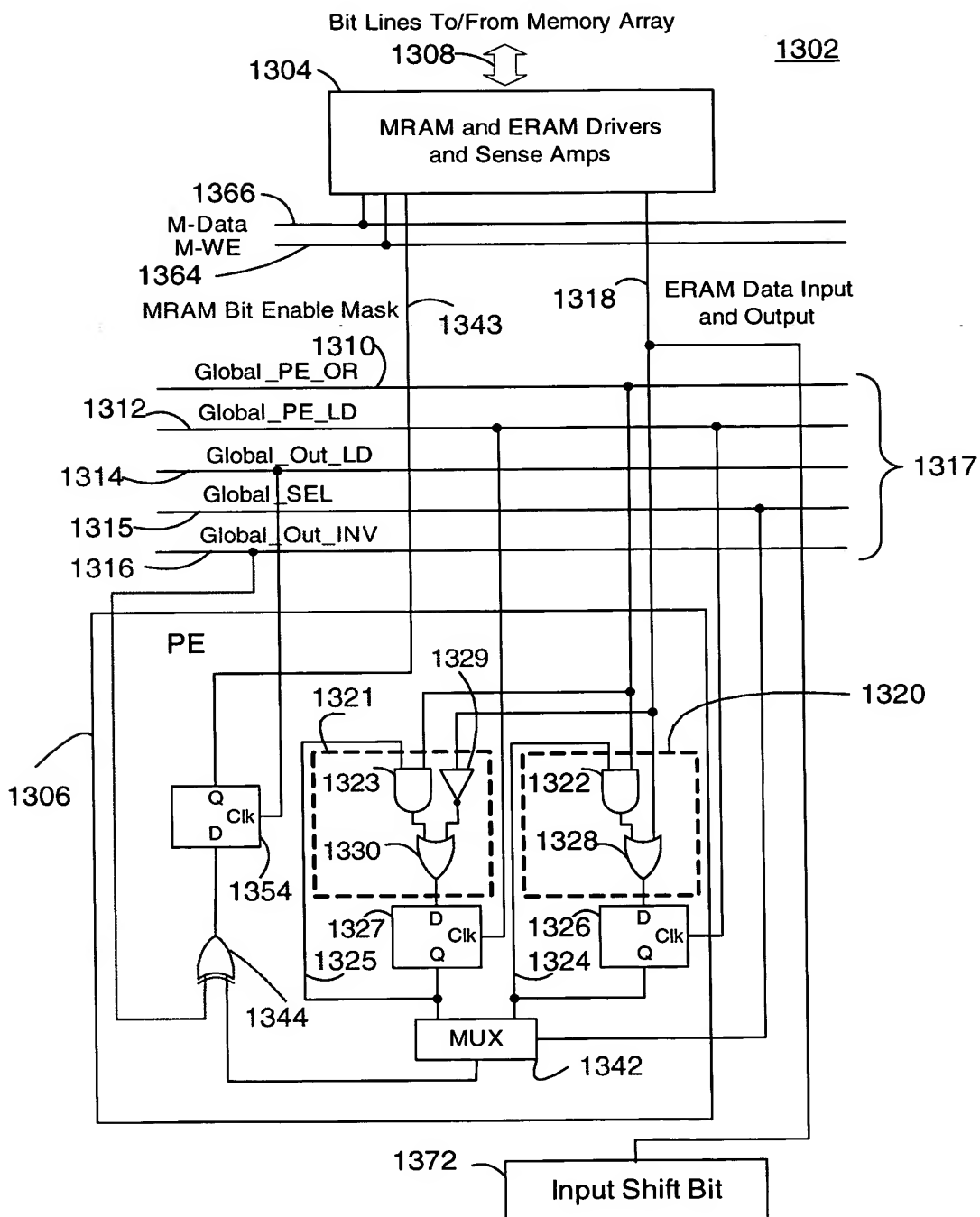


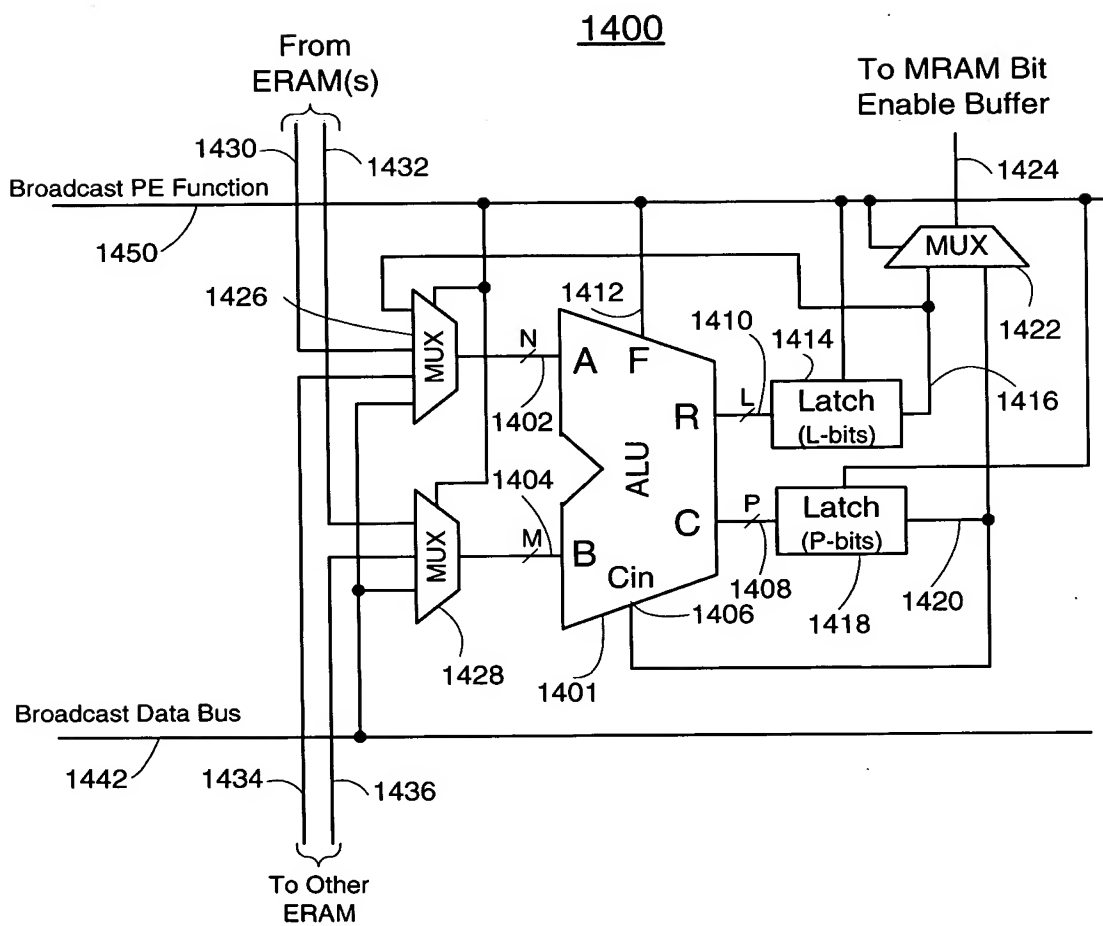
FIG. 14

FIG. 15

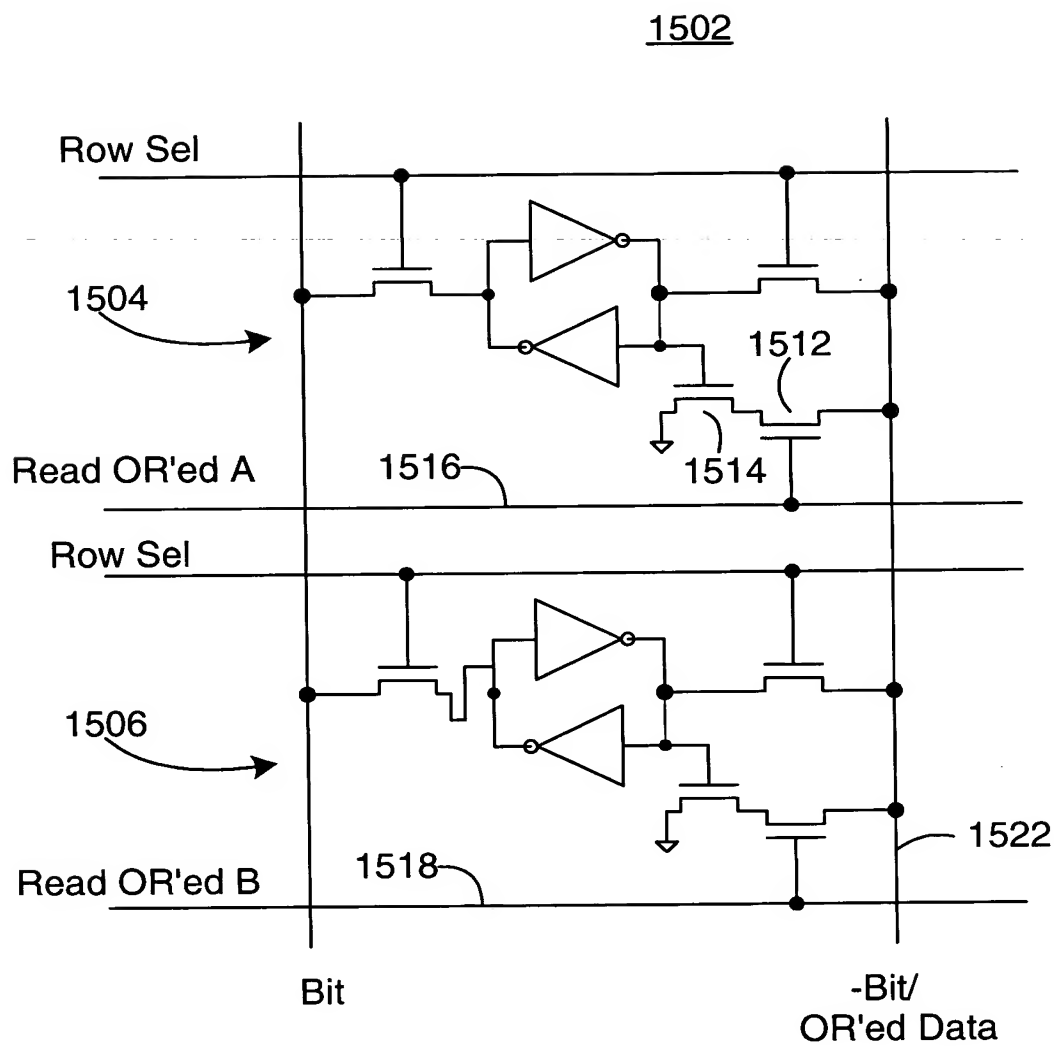


FIG. 16

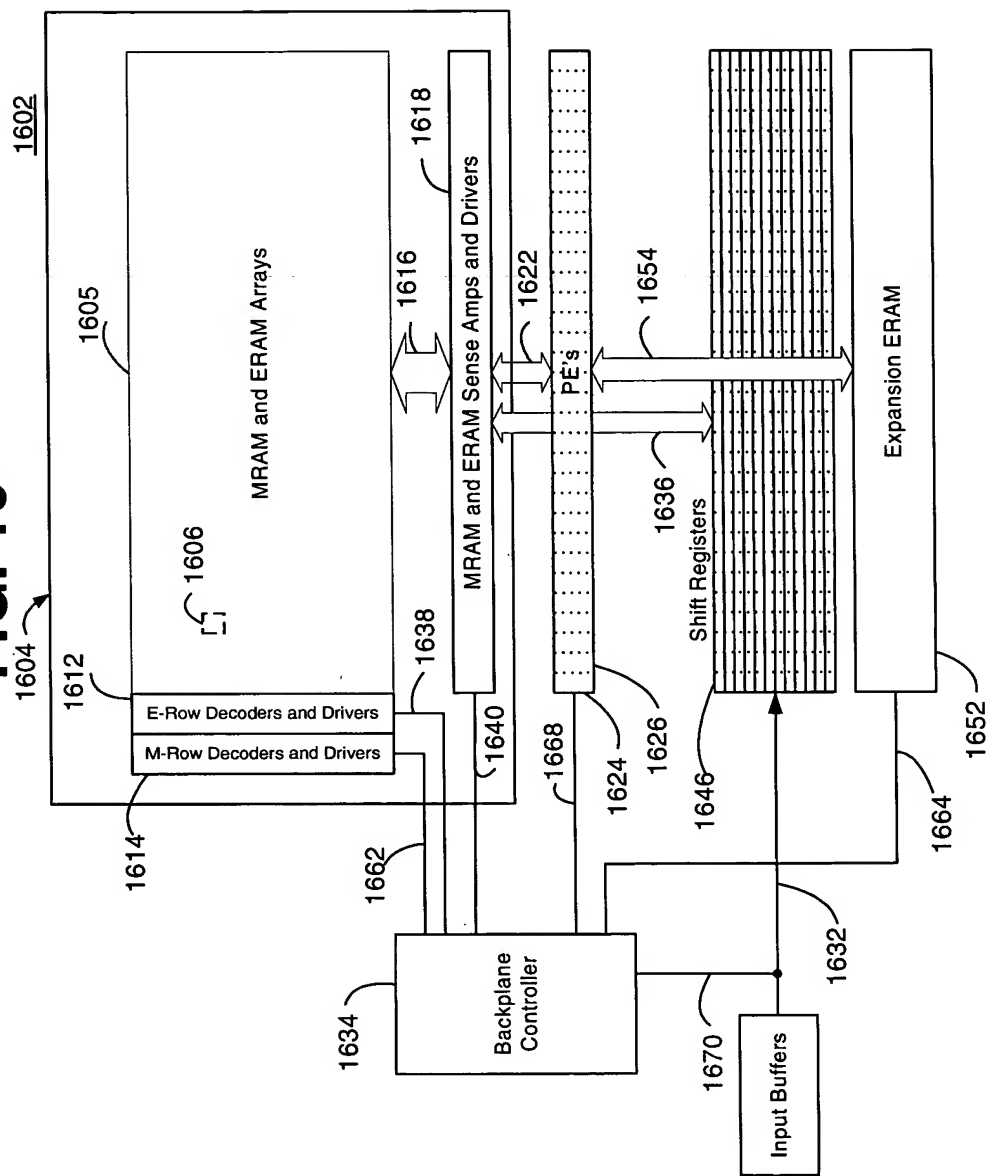
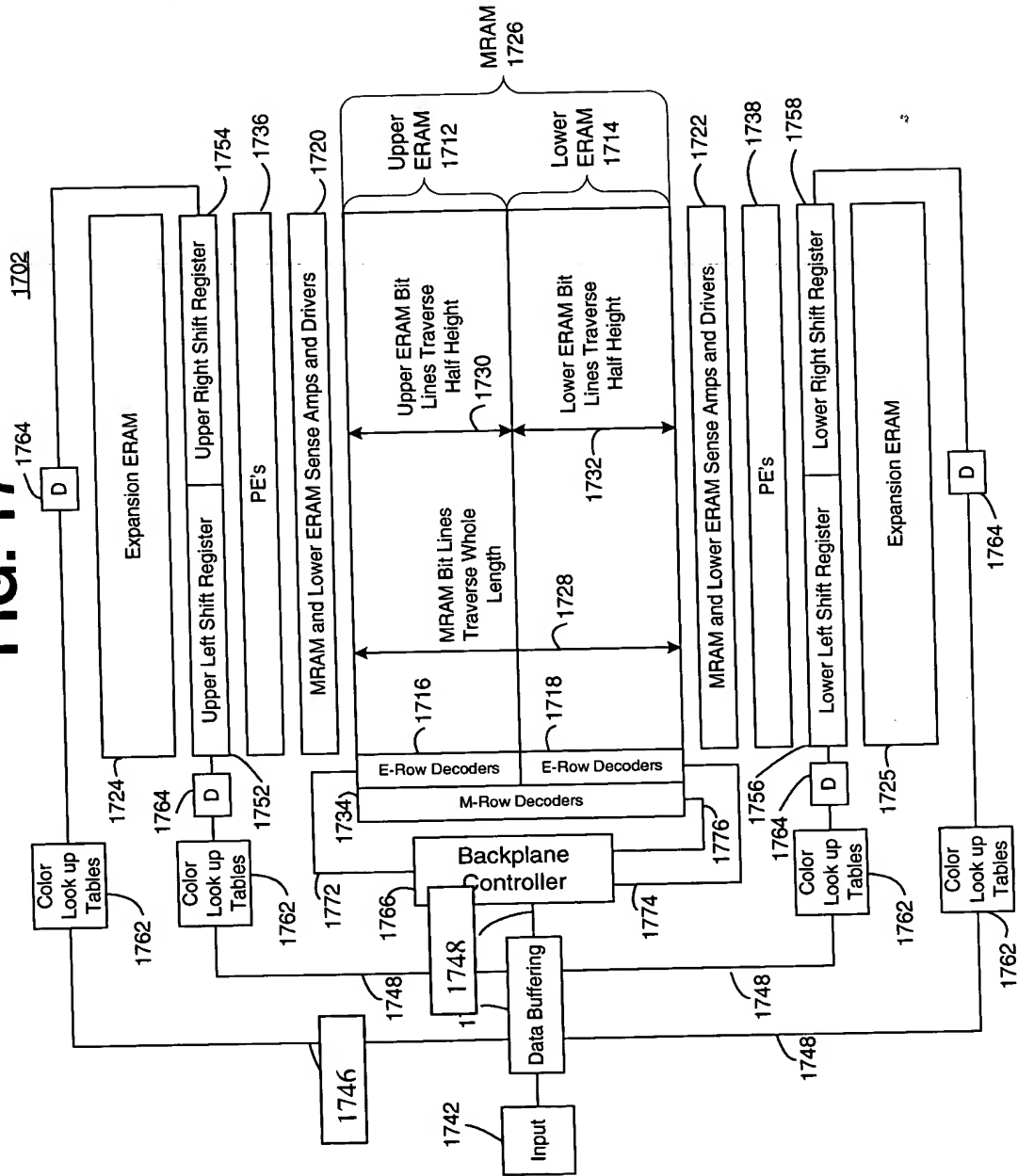


FIG. 17



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	LS MRAM			MS MRAM				LS ERAM Reads			MS ERAM Reads					LSB Time=	4	
Count #	3	2	1	0	0	1	2	3	3	2	1	0	1	2	3	Line Time=	17	
Binary Count	#####	#####	#####	#####	#####	#####	#####	#####										
Binary T Weight	0	4	8	12	13	26	44	60										
Adjusted Time	0	4	8	12	13	26	44	60										
Offset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Write Pattern	Write Conflict	Read Pattern
Set/Reset Disp.	S	S	S	R	S	R	R	R										Read Conflict
TIME (Cycles)																		
-2									0							0		1000000
-1									1							0		1000000
0	0															10000000		0
1																0		0
2																0		0
3										1						0		100000
4		0														1000000		0
5																0		0
6																0		0
7											0					0		10000
8			0													100000		0
9																0		0
10												2				0		1000
11												3				0		1000
12				0												10000		0
13					0											1000		0
14																0		0
15									0							0		1000000
16									1							0		1000000
17	1															10000000		0
18																0		0
19																0		0
20										1						0		100000
21		1														1000000		0
22																0		0
23																0		0
24											0					0		10000
25			1													100000		0
26																0		0
27												2	3			0		1100 Read Conflict
28							0					3				100		1000
29					1											10000		0
30						1										1000		0
31																0		0
32									0							0		1000000
33																		

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[illegible]

FIG. 20

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Simple 2-LS Bit Count and 2-MS-Bit Split Count Example With LS-Bit Time = 4 Clocks and 13 Clocks Between Lines Un-Corrected

Count #	LS MRAM			MS MRAM					LS ERAM Reads			MS ERAM Reads				LSB Time=	Line Time=
Count #	3	2	1	0	0	1	2	3	3	2	1	0	1	2	3	4	13
Binary Count	11	10	01	00	00	01	10	11									
Binary T Weight	0	4	8	12	13	28	44	60									
Adjusted Time	0	4	8	12	13	28	44	60									
Offset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Set/Reset Disp.	S	S	S	R	S	R	R	R								Write Pattern	Write Conflict
TIME (Clocks)																	Read Pattern
-2									0							0	1000000
-1									1							0	1000000
0	0															10000000	0
1																0	0
2																0	0
3																0	100000
4		0								1						10000000	0
5																0	0
6																0	0
7											0					0	10000
8			0													100000	0
9																0	0
10												2				0	1000
11									0			3				0	1001000 Read Conflict
12				0					1							10000	1000000
13	1				0											10001000 Write Conflict	0
14																0	0
15																0	0
16										1						0	100000
17		1														10000000	0
18																0	0
19											0					0	10000
20																0	0
21			1													100000	0
22																0	0
23												2				0	1000
24									0			3				0	1001000 Read Conflict
25				1					1							10000	1000000
26	2				1											10001000 Write Conflict	0
27													3			0	100
28						0										100	0
29										1						0	100000
30		2														10000000	0
31																0	0
32																0	0
33											0					0	10000
34			2													100000	0
35																0	0
36												2				0	1000
37									0			3				0	1001000 Read Conflict
38				2					1							10000	1000000
39	3				2											10001000 Write Conflict	0
40													3			0	100
41						1										100	0
42										1						0	100000
43		3												2		10000000	10
44						0										10	0
45																0	0
46											0					0	10000
47			3													100000	0
48																0	0
49												2				0	1000
50									0			3				0	1001000 Read Conflict
51				3					1							10000	1000000
52	4				3											10001000 Write Conflict	0
53													3			0	100
54						2										100	0
55										1						0	100000
56		4												2		10000000	10
57						1										10	0
58																0	0
59											0					0	10000
60			4						0							100001 Write Conflict	0
61																0	0
62												2				0	1000
63									0			3				0	1001000 Read Conflict

FIG. 21

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Simple 2-LS Bit Count and 2-MS-Bit Split Count Example With LS-Bit Time = 4 Clocks and 13 Clocks Between Lines Corrected

Count #	LS MRAM			MS MRAM				LS ERAM Reads			MS ERAM Reads				LSB Time=	4		
Binary Count	3	2	1	0	0	1	2	3	3	2	1	0	1	2	3	Line Time=	13	
Binary T Weight	0	4	8	12	13	28	44	60										
Adjusted Time	0	4	8	12	14	29	45	61										
Offset	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	Write	Write	Read
Set/Reset Disp.	S	S	S	R	S	R	R	R								Pattern	Conflict	Pattern
TIME (Clocks)																		
-2									0							0		1000000
-1									1							0		1000000
0	0															10000000		0
1																0		0
2																0		0
3										1						0		100000
4		0														1000000		0
5																0		0
6																0		0
7										0						0		10000
8			0													100000		0
9												2				0		1000
10												3				0		1000
11									0							0		1000000
12				0					1							10000		1000000
13	1															10000000		0
14					0											1000		0
15																0		0
16										1						0		100000
17		1														1000000		0
18																0		0
19																0		0
20										0						0		10000
21																100000		0
22			1									2				0		1000
23												3				0		1000
24									0							0		1000000
25				1					1							10000		1000000
26	2															10000000		0
27					1											1000		0
28													3			0		100
29						0				1						100		100000
30		2														1000000		0
31																0		0
32																0		0
33											0					0		10000
34			2													100000		0
35												2				0		1000
36												3				0		1000
37									0							0		1000000
38				2					1							10000		1000000
39	3															10000000		0
40					2											1000		0
41													3			0		100
42						1				1						100		100000
43		3														1000000		0
44														2		0		10
45						0										10		0
46											0					0		10000
47			3													100000		0
48												2				0		1000
49												3				0		1000
50									0							0		1000000
51				3					1							10000		1000000
52	4															10000000		0
53						3										1000		0
54													3			0		100
55						2				1						100		100000
56		4														1000000		0
57														2		0		10
58						1										10		0
59											0					0		10000
60			4													100000		0
61								0				2				1		1000
62												3				0		1000
63									0							0		1000000

FIG. 22

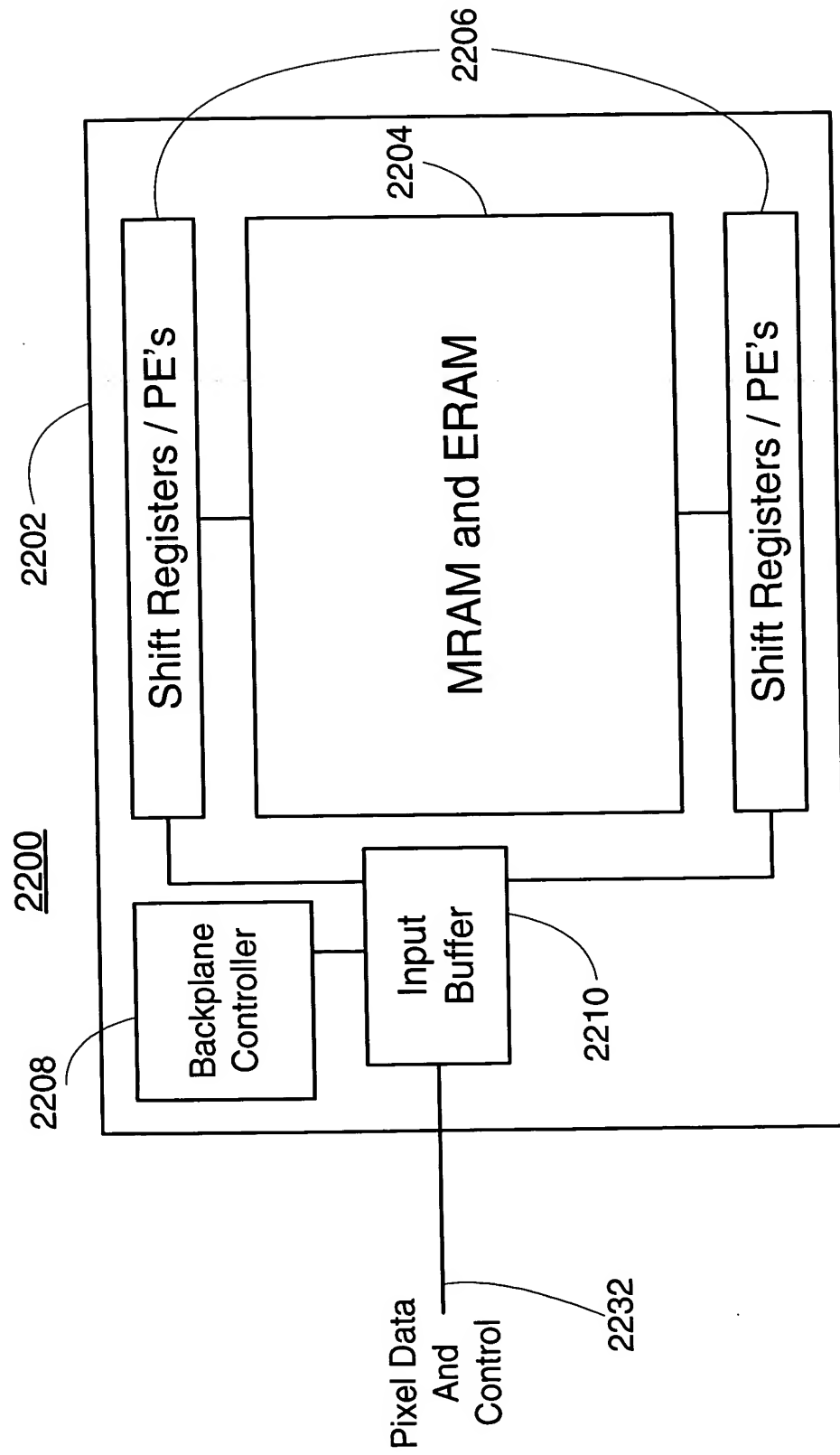


FIG. 23

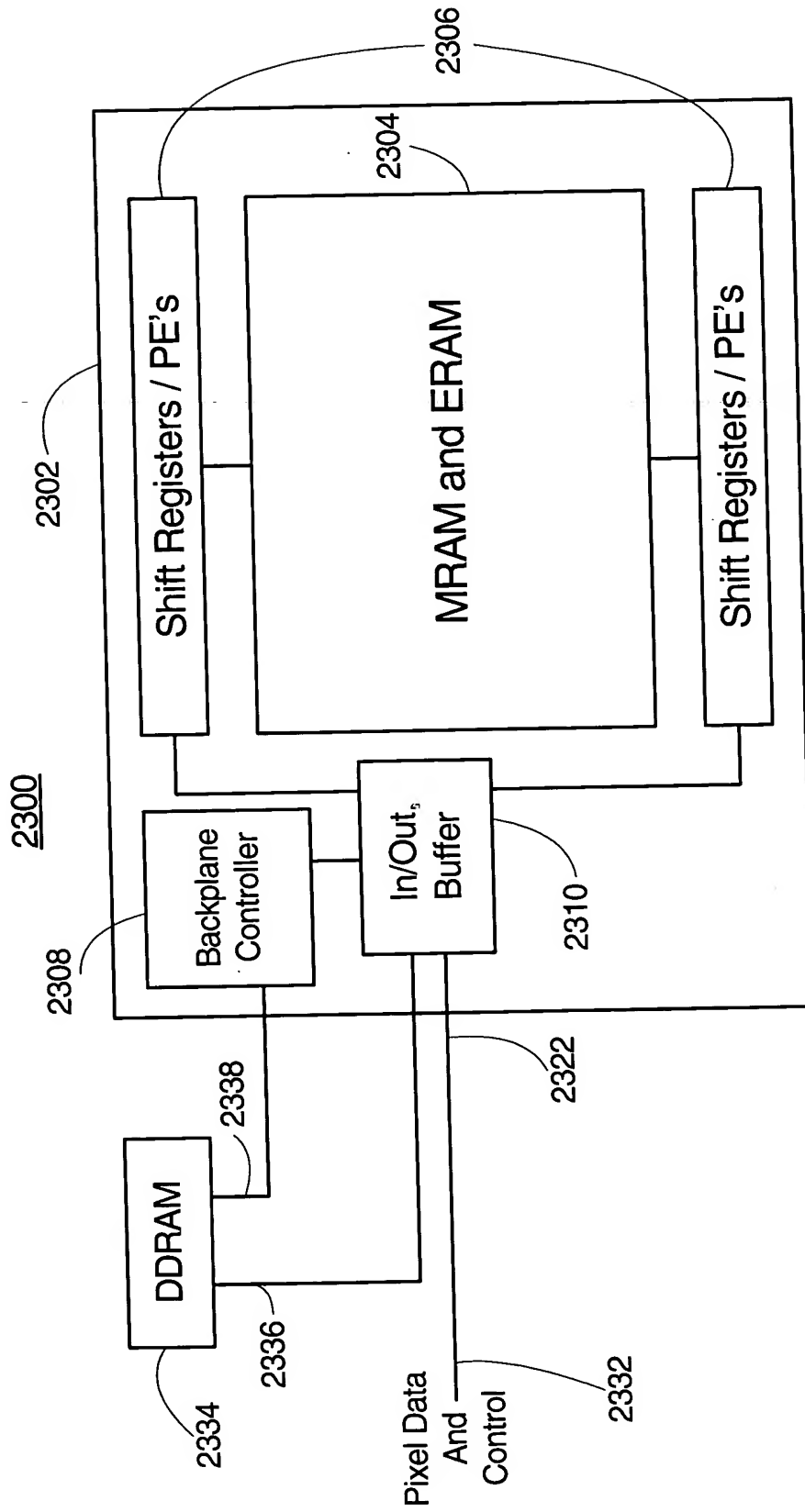


FIG. 24

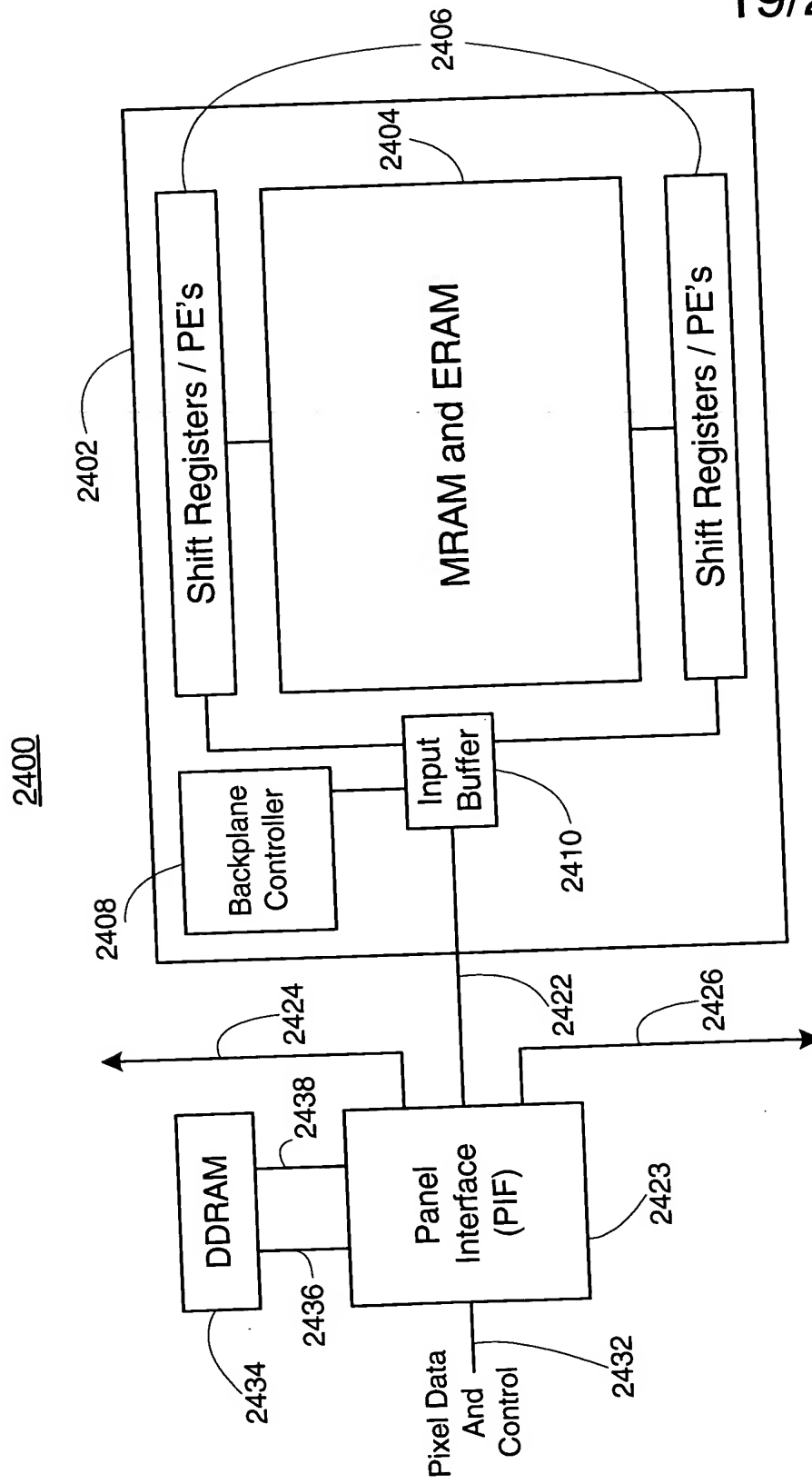


FIG. 25

Pixel Value	Binary Bits 9-6	P1	P2	Number Reads
0	0000	0	0	2
1	0001	0	1	2
2	0010	0	1	2
3	0011	0	1	1
4	0100	1	0	2
5	0101	1	1	2
6	0110	1	1	2
7	0111	1	1	1
8	1000	1	0	2
9	1001	1	1	2
10	1010	1	1	2
11	1011	1	1	1
12	1100	1	0	1
13	1101	1	1	1
14	1110	1	1	1
15	1111	1	1	0
Total Zeros	32		Total	24

FIG. 26

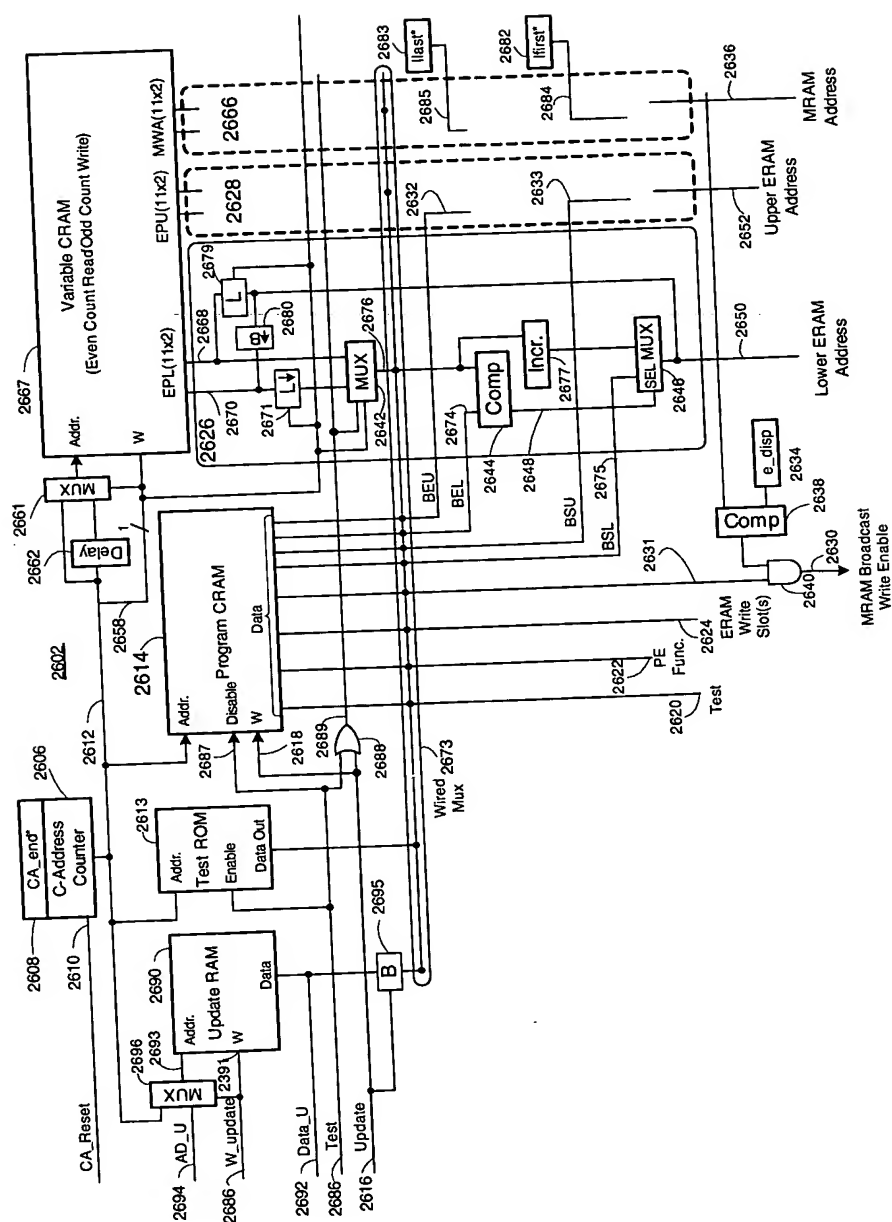


FIG. 27

Simple Dual Time Base Example (3-LS and 2-MS Example)

Input Value	First Time Base (Simple Binary)						Second Time Base						Delta	
	MS	LS	Time	Bit Position	Time Value	Cumm. Value	Time	MS	LS	Bit Position	Time Value	Cumm. Value	First-Second	% Diff
0	0	0	0.000	LS=0	0	0.000	0.000	0	0	LS=0	0	0.000	0.000	0.0
1	0	1	0.032	LS=1	0.032	0.032	0.035	0	1	LS=1	0.035	0.035	-0.003	-9.4
2	0	2	0.065	LS=2	0.033	0.065	0.070	0	2	LS=2	0.035	0.070	-0.005	-7.7
3	0	3	0.097	LS=3	0.032	0.097	0.105	0	3	LS=3	0.035	0.105	-0.008	-8.2
4	0	4	0.129	LS=4	0.032	0.129	0.139	0	4	LS=4	0.034	0.139	-0.010	-7.8
5	0	5	0.161	LS=5	0.032	0.161	0.174	0	5	LS=5	0.035	0.174	-0.013	-8.1
6	0	6	0.194	LS=6	0.033	0.194	0.209	0	6	LS=6	0.035	0.209	-0.015	-7.7
7	0	7	0.226	LS=7	0.032	0.226	0.209	0	6	LS=7	0.035	0.244	0.017	7.4
8	1	0	0.258	MS=0	0.000	0.000	0.244	0	7	MS=0	0.000	0.000	0.014	5.4
9	1	1	0.290	MS=1	0.258	0.258	0.279	1	0	MS=1	0.279	0.279	0.011	3.8
10	1	2	0.323	MS=2	0.258	0.516	0.314	1	1	MS=2	0.261	0.540	0.009	2.8
11	1	3	0.355	MS=3	0.258	0.774	0.349	1	2	MS=3	0.251	0.791	0.006	1.7
12	1	4	0.387				0.384	1	3				0.003	0.8
13	1	5	0.419				0.418	1	4				0.001	0.2
14	1	6	0.452				0.453	1	5				-0.001	-0.2
15	1	7	0.484				0.488	1	6				-0.004	-0.9
16	2	0	0.516				0.523	1	7				-0.007	-1.4
17	2	1	0.548				0.540	2	0				0.008	1.5
18	2	2	0.581				0.575	2	1				0.006	1.0
19	2	3	0.613				0.610	2	2				0.003	0.5
20	2	4	0.645				0.645	2	3				0.000	0.0
21	2	5	0.677				0.679	2	4				-0.002	-0.3
22	2	6	0.710				0.714	2	5				-0.004	-0.6
23	2	7	0.742				0.749	2	6				-0.007	-1.0
24	3	0	0.774				0.784	2	7				-0.010	-1.3
25	3	1	0.806				0.791	3	0				0.015	1.9
26	3	2	0.839				0.826	3	1				0.013	1.5
27	3	3	0.871				0.861	3	2				0.010	1.1
28	3	4	0.903				0.896	3	3				0.007	0.8
29	3	5	0.935				0.930	3	4				0.005	0.5
30	3	6	0.968				0.965	3	5				0.003	0.3
31	3	7	1.000				1.000	3	6				0.000	0.0

FIG. 28

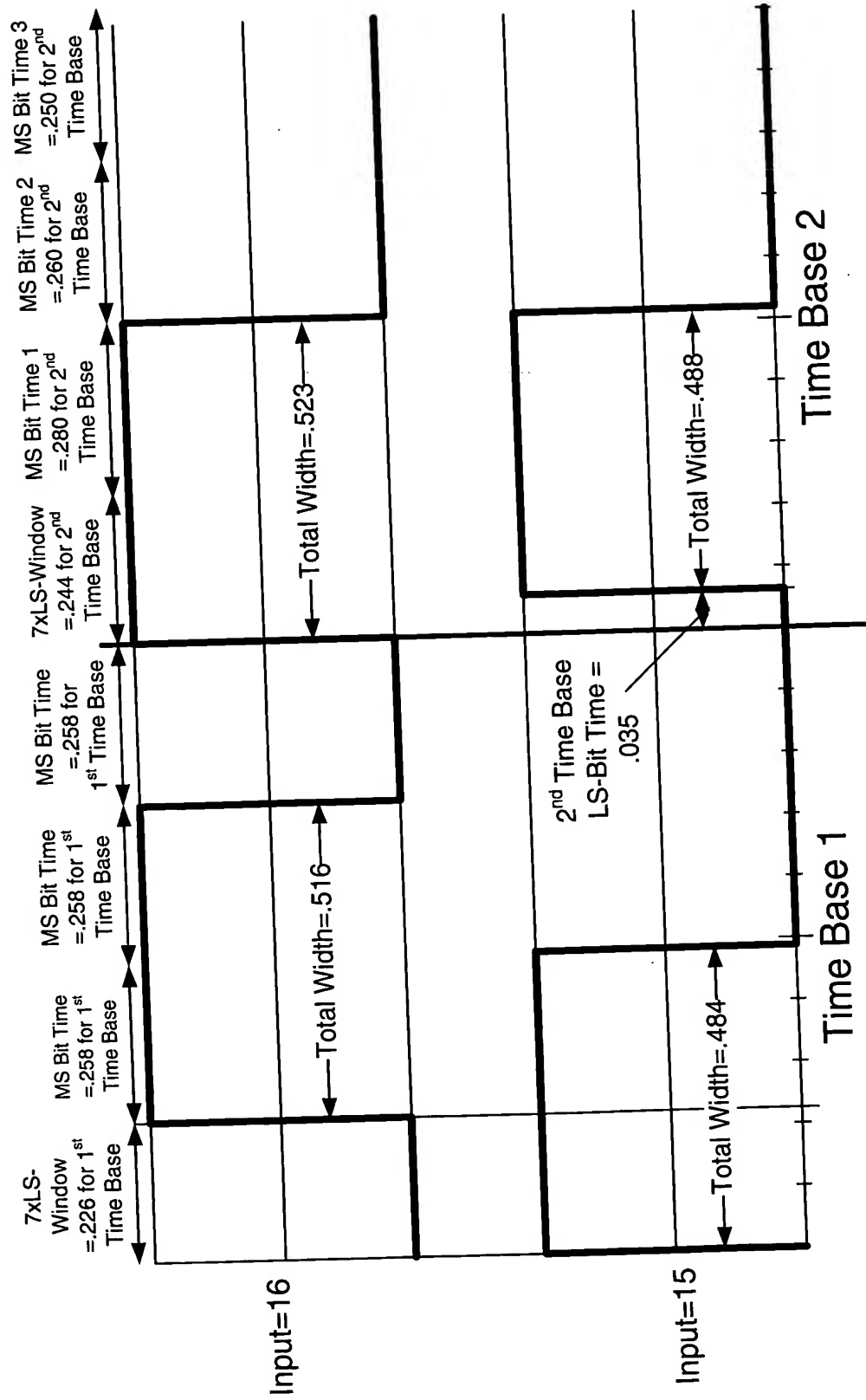


FIG. 29

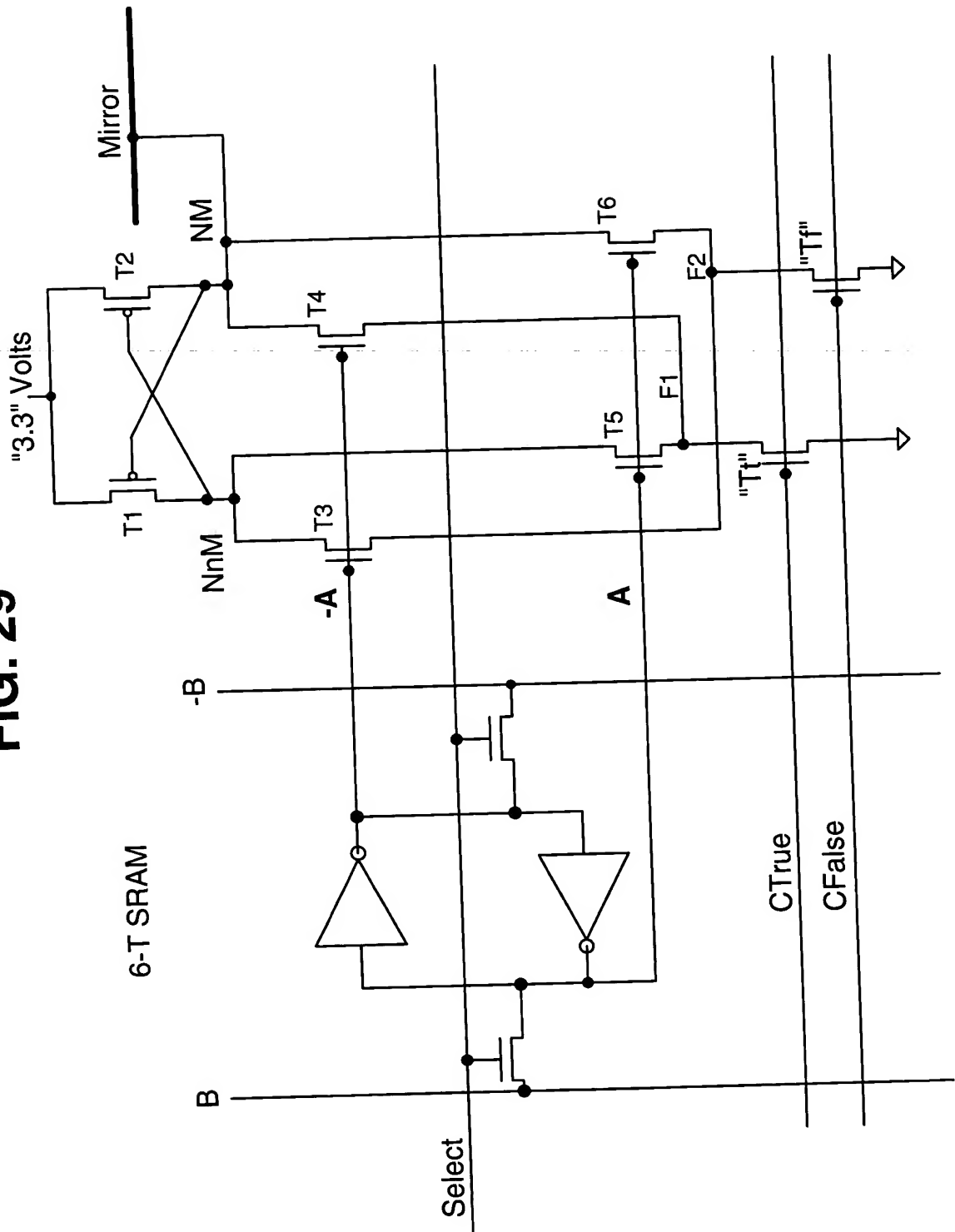


FIG. 30

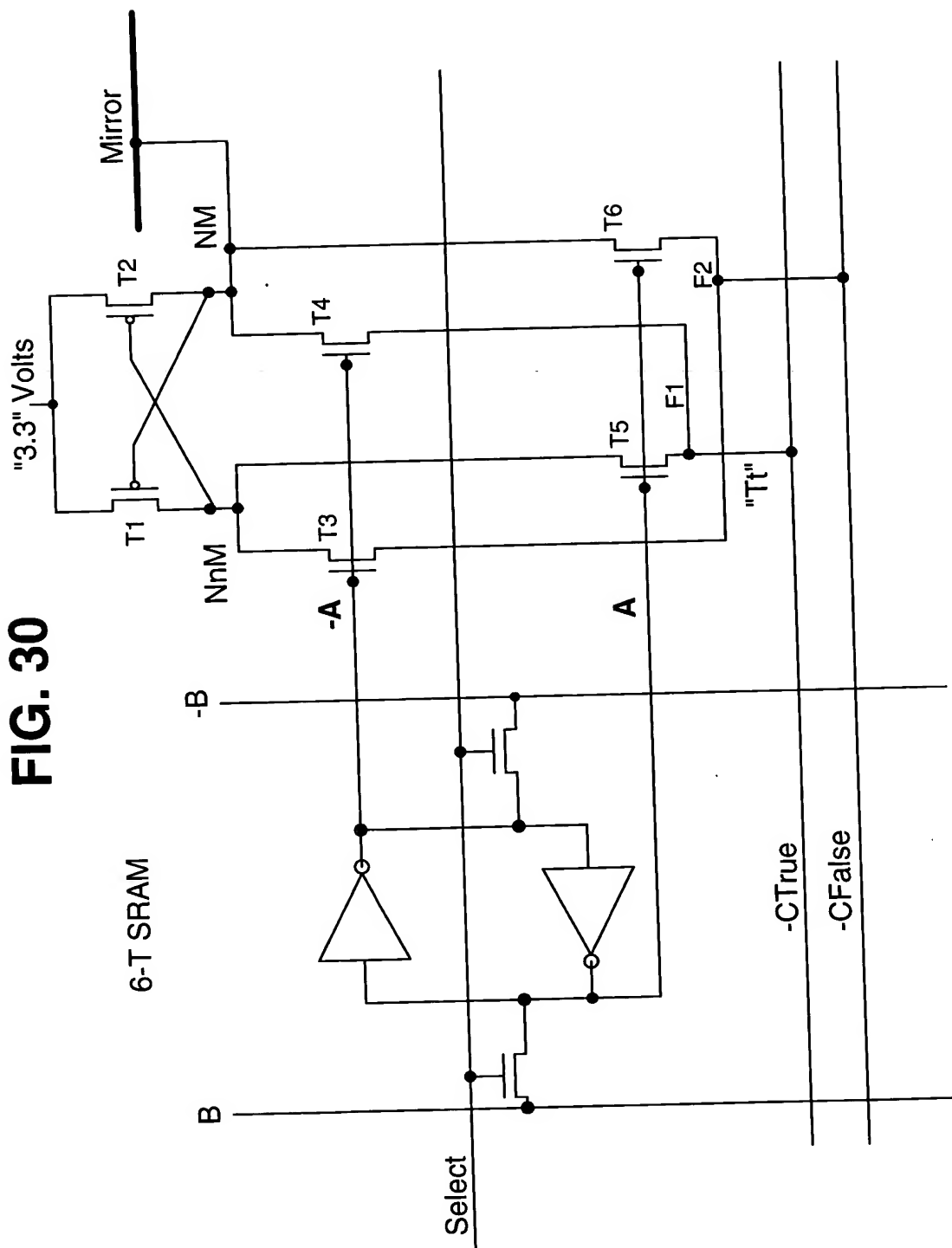


FIG. 31

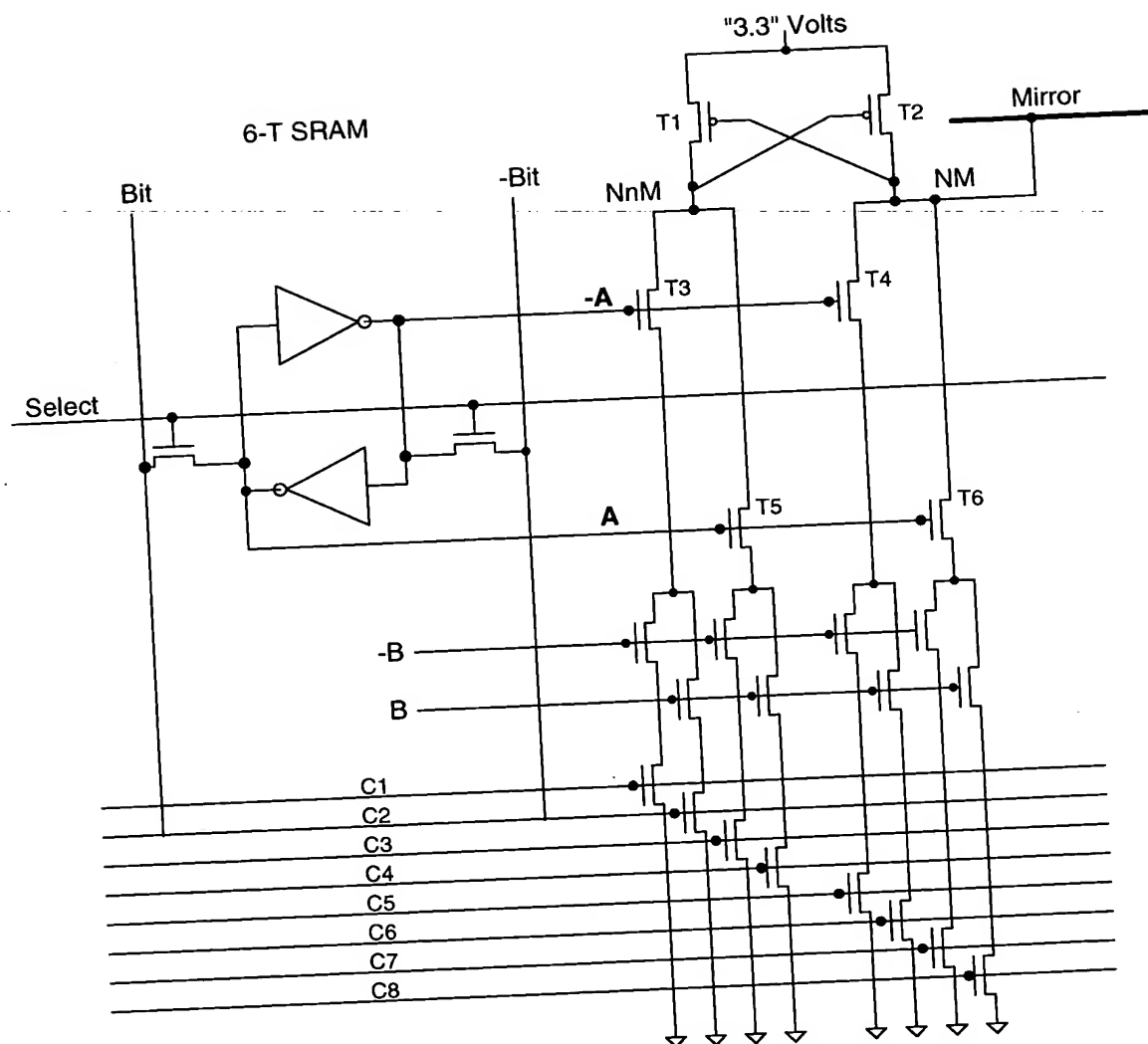


FIG. 32

